(1) Molecular weight

19,000 ± 5,000 daltons on gel filtration and sodium dodecylsulfate polyacrylamide gel electrophoresis (SDS-PAGE);

(2) Isoelectric point (pI)

4.8 ± 1.0 on chromatofocusing;

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(3) Biological activity

Inducing the interferon-γ production by immunocompetent cells; and

(4) Partial amino acid sequence

Possessing a part of the whole of the amino acid sequence of SEQ ID NO:2, wherein Xaa is Met or Thr.

94. A monoclonal antibody according to claim 93, wherein the amino acid sequence of the IGIF or IL-18 is encoded by a cDNA which is hybridizable with a probe having the coding sequence shown in SEQ ID NO:1 at 60°C in a solution of 5 x SSPE, 5 x Denhardt's solution, 0.5% (w/v) sodium dodecyl sulfate (SDS), and 100 µg/ml denatured salmon sperm DNA.

95. A monoclonal antibody according to claim 93, wherein said IGIF or IL-18 is obtainable from mice.

96. A monoclonal antibody according to claim 93, wherein the IGIF or IL-18 comprises the amino acid sequence shown as residues 26-43 and 79-103 of SEQ ID NO:2.

97. A monoclonal antibody which specifically recognizes a polypeptide having the amino acid sequence shown in SEQ ID NO:2, wherein Xaa is Met or Thr.

98. A monoclonal antibody according to any one of claims 93 to 97 which is an IgG or IgM class antibody.

99. An antibody according to any one of claims 93 to 97 which is labeled with a radiolabel, an enzyme, or a fluorophore.

100. An antibody according to any one of claims 93 to 97 which is capable of inhibiting the biological activity of IGIF or IL-18.

101. A hybridoma which produces a monoclonal antibody according to any one of claims 93 to 97.

102. A method for producing a monoclonal antibody which comprises culturing a hybridoma according to claim 101 *in vitro* or *in vivo* under conditions suitable to promote production of the antibody and recovering the antibody so produced.

103. A method according to claim 102, further comprising the step of subjecting the antibody to one or more processes selected from the group consisting of salting out, dialysis, filtration, concentration, centrifugation, separatory sedimentation, gel filtration chromatography, ion exchange chromatography, HPLC, affinity chromatography, gel electrophoresis, and isoelectric focusing.

104. A method for determining the presence of IGIF or IL-18 in a sample, comprising the steps of:

contacting a sample suspected to contain IGIF or IL-18 with an antibody according to any one of claims 93 to 97 under conditions suitable to promote the specific binding of the antibody to IGIF or IL-18 to form an immune complex; and

detecting any such immune complex which is so formed.

105. A method according to claim 104, wherein the antibody is immobilized on an insoluble matrix or substrate.

106. A method according to claim 104, wherein the antibody is labeled with a radiolabel, an enzyme, or a fluoprophore.

107. A method according to claim 104, further comprising the step of quantifying the amount of IGIF or IL-18 present in the sample.

108. A method according to claim 104, wherein the IGIF or IL-18 has the amino acid sequence shown in SEQ ID NO:2, wherein Xaa is Met or Thr.

109. A method for purifying IGIF or IL-18 from a sample containing other components, comprising the steps of:

contacting the sample with a monoclonal antibody according to any one of claims 93 to 97 under conditions suitable to promote the specific binding of the antibody to IGIF or IL-18 to form an immune complex; and

separating the immune complex from at least one of the other components in the sample.

110. A method according to claim 109, further comprising the step of recovering the IGIF or IL-18 from the immune complex.

111. A method according to claim 109, wherein the antibody is immobilized on an insoluble matrix.

112. A method according to claim 109, wherein the contacting step is effected by applying the sample to a chromatography column comprising an insoluble matrix.

113. A method according to claim 112, further comprising the step of recovering the IGIF of IL-18 from the chromatography column.

114. A method according to claim 113, wherein the IGIF or IL-18 is recovered in nearly quantitative yield and with a purity of at least 95%.

115. A method according to claim 109, wherein the IGIF or IL-18 has the amino acid sequence shown in SEQ ID NO:2, wherein Xaa is Met or Thr.

116. A method of inhibiting the biological activity of IGIF or IL-18, comprising the step of contacting an antibody according to claim 100, with the IGIF or IL-18.

117. A method according to claim 116, wherein the IGIF or IL-18 has the amino acid sequence shown in SEQ ID NO:2, wherein Xaa is Met or Thr.--

REMARKS

The claims finally rejected by the examiner are canceled and replaced with new claims 93-117, which define patentable subject matter warranting their allowance.